VERMONA

ELEKTROAKUSTISCHE MANUFAKTUR



DRM1 MKIII

Bedienungsanleitung
User Guide

Introduction

The analogue drum-synthesizer DRM1 MKIII is not just another instrument or piece of equipment. It is also part of history - our history.

In its first version, we have reentered the market under the brand name VERMONA with a first product. A return to a market from which we temporarily had to pull back due to significant historical and political changes. This product was introduced many years ago but the DRM1 is still being produced. Why? There are still musicians that do not own this product. Because of this, the DRM1 has been continuously refined and has reached version MKIII today – the best drum-synthesizer we have ever created.

Now it is up to you, dear user, customer and musician, to design the best beats you ever created!

The VERMONA-team
Elektroakustische Manufaktur Erlbach

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Important Safety Information

1. Read these instructions!

2. Keep these instructions! Always include these instructions when passing the DRM1 MKIII on to third parties!

3. Heed all warnings and follow all instructions!

4. Do not use the DRM1 MKIII near water!

5. Only clean the DRM1 MKIII when it is not connected to the mains power supply! Clean only with a dry cloth!

6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat!

7. Do not defeat the safety purpose of the polarized or grounding-type plug! A polarized plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet!

8. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus!

9. Only use attachments/accessories specified by VERMONA!

10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus! When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over!

11. Unplug the DRM1 MKIII during lightning storms or when unused for long periods of time!

12. Refer all servicing to qualified service personnel! Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, when the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

13. To completely disconnect this apparatus from the AC mains, disconnect the power supply cord plug from the AC receptacle!

14. **WARNING:** To reduce the risk of fire or electric shock, do not expose the DRM1 MKIII to rain or moisture!

15. Do not expose the DRM1 MKIII to dripping or splashing and ensure that no objects filled with liquids, such as vases or beer glasses, are placed on the equipment!

16. The mains plug of the power supply cord shall remain readily accessible!

Installation

- Ensure that the room in which you use the DRM1 MKIII is wired in accordance with the local electrical code and checked by a qualified inspector.

- Do not install the DRM1 MKIII in hot, humid, or excessively dusty locations, in direct sunlight or in locations where it is exposed to externally generated vibrations!

- Do not place burning objects (e.g. candles) on top of or near the DRM1 MKIII!

- If condensation has formed on the DRM1 MKIII, e.g. because it was moved from a cold environment to a warm one, allow the product to acclimatize to room temperature before using it!

- Do not overload wall outlets and extension cables as this may result in fire and electric shock.

Setup

Scope of delivery

To ensure top quality, we carefully inspected the DRM1 MKIII before packaging. Nevertheless, the unit could have been damaged during transportation. Therefore, we ask you to take a serious look at the DRM1 MKIII when unpacking. Do not hesitate to contact us, should there be anything unusual with the unit or its packaging.

You should find the following items in the box:

- the DRM1 MKIII
- a power chord
- this manual
- a big portion of fun

Connection and Startup

The DRM1 MKIII is a pure sound module. For reasonable use, it needs to be connected to a sequencer, a computer or keyboard as well as to a mixing desk or an amplifier. After connecting the module to a power socket using the supplied power chord, setup the audio- and MIDI-connections as follows:

Setting up audio connections

⚠ ***CONNECT FIRST, AND THEN SWITCH ON!* To protect your speakers, your audio-interface and, last but not least, your ears, we urgently recommend setting up all cable connections while the equipment is switched off. Do not underestimate level peaks and resulting possible damage that could occur when plugging in or removing audio cables.**

1. The jacks **OUT RIGHT** and **OUT LEFT** ⑨ on the module's rear output all signals in stereo. Connect these jacks to two line-inputs of a mixing desk, a computer-audio-interface or to an amplifier using two 6.3 mm cables (TS). Alternatively or in parallel, you may connect headphones to the **PHONES** jack ⑦ on the front panel.

☛ **All of the DRM1 MKIII instrument channels offer individual outputs ⑤, allowing them to be patched to the inputs of a mixing console or an audio-interface. Find more details in chapter "Individual Outputs/Inserts" on page 20. Use the stereo output as a starting point.**

2. Before switching on the unit by pressing its **POWER** button ①, complete all audio connections to avoid loud impulses and cracking noises in your audio system. These peaks can lead to distortion and could even harm converters when connected directly to an audio-interface. For safety reasons, while connecting and powering up the unit, turn down the **MASTER** control ⑥ of the DRM1 MKIII as well as the input controls of the units that follow in the signal chain. After powering up the DRM1 MKIII, the corresponding red LED next to the **POWER** button ① will light up.

Setting up MIDI connections

1. The unit that is supposed to trigger the DRM1 MKIII's sounds needs to be connected to the DRM1's **MIDI IN** jack ⑩. This can be a groove box, a hardware-sequencer, the MIDI output of a software-sequencer (using the computer's audio- or MIDI-interface) or a keyboard.

2. **MIDI THRU** ⑩ forwards the MIDI data from the DRM1 MKIII's MIDI input and allows connecting more MIDI devices in a row.

Control elements and connections

Front Panel/User Interface

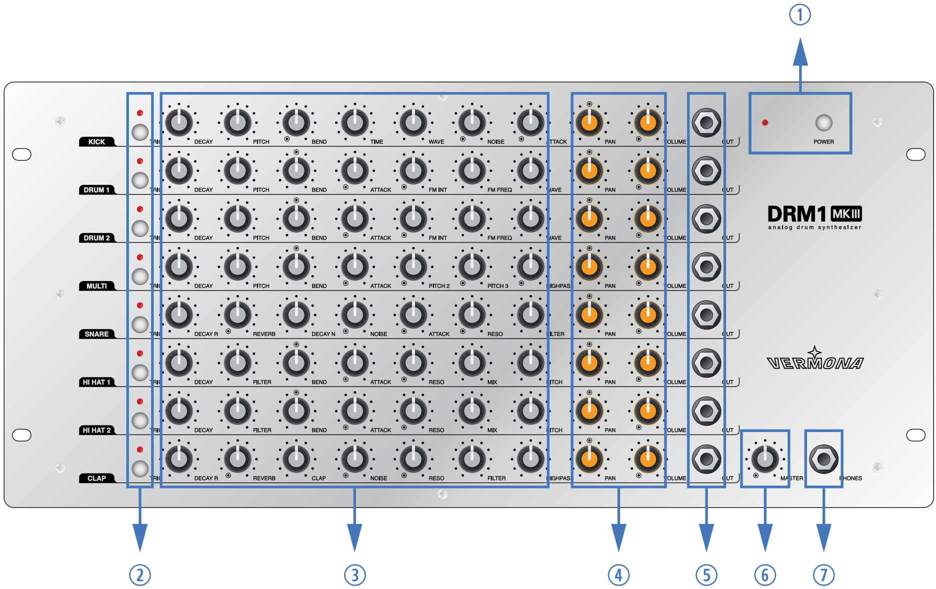


Figure 1: User Interface of the DRM1 MKIII

① **POWER** - power switch with LED

② **TRIG** button with LED - triggers sound in instrument channel

③ sound shaping parameters (see "The DRM1 MKIII's instrument channels" on page 10)

④ **PAN** and **VOLUME** - channel volume and panning (see "The Sound Generation" on page 9)

⑤ **OUT** - individual outputs/inserts (see "Individual Outputs/Inserts" on page 20)

⑥ **MASTER** - overall volume

⑦ **PHONES** - headphones output

Rear Panel

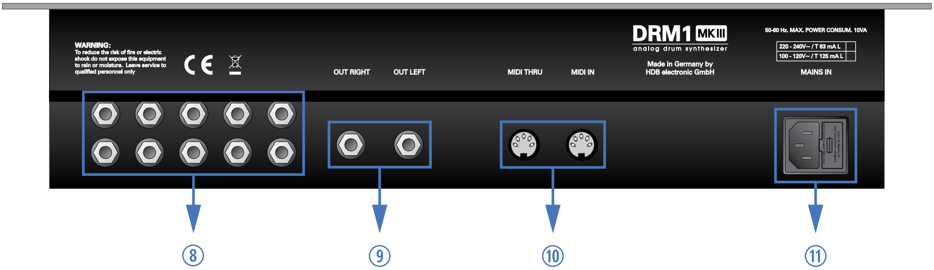


Figure 2: rear panel of the DRM1 MKIII

⑧ optional Trigger-inputs (see "Trigger-Inputs (optional)" on page 21)

⑨ Main outputs (**OUT RIGHT** and **OUT LEFT**)

⑩ MIDI jacks (**MIDI THRU** and **MIDI IN**)

⑪ Power connector and fuse holder

☛ **The fuse holder of the power connector is equipped with an active and a replacement fuse. Check the active fuse if the DRM1 MKIII shouldn't work anymore and replace it by the second fuse if required.**

⚠ **Unplug the power lead before opening the fuse holder. If you are unconfident with checking the fuse on your own, consult an authorized service technician!**

The Sound Generation

Now that you have carefully unpacked and setup the DRM1 MKIII, let's take a closer look. Sorry for bothering you with mainly theoretical and security aspects. To get the most out of this unit in a creative and musical sense, this was necessary. Now, let's find out what the DRM1 MKIII really is!

The DRM1 MKIII is a sound module, specialized to create synthetic drum sounds that are produced by pure analogue circuits. It allows the creation of eight independent drum- and percussion sounds. Although these sounds carry the component names of a traditional drum kit, these are "only" imitations of the real thing. However, this is fully intended. Synthetic or analogue drums provide an individual character and aesthetic. These sounds have significantly influenced different musical genres if not made them possible at all. Neither old school Hip-Hop, Electro, House nor Techno would have been possible without the aid of the famous analogue drum machines invented by our friends from Japan.

The DRM1 MKIII has a lot to offer. It covers many aspects of those classic units but also a lot more. But one thing can certainly be said. The DRM1 MKIII is all original and not a clone, trying to reproduce 8 or 9 classic sounds.

Let's take a closer look at the individual drums, consecutively referred to as *instrument channels*. At the same time, we will also name possible applications for their use.

All eight instrument channels in the DRM1 MKIII share three elements:

TRIG This button manually triggers the instrument channel's sound. Here, the volume is constant and equals the level at 2/3 of maximum MIDI velocity. Note: For instrument channels *HI HAT 1* and *HI HAT 2*, these offer an additional choice of sounds (see "HI HAT 1/HI HAT 2" on page 15).

PAN this control adjusts the instrument channels' position in the stereo panorama when using the main- ⑨ and headphone outputs ⑦. Note that **PAN** has no effect on the instrument channels' individual outputs ⑤.

VOLUME this control adjusts the instrument channel's volume for the main- ⑨, headphone- ⑦ and individual outputs ⑤.

☛ **For getting the best possible signal-to-noise ratio we highly recommend to set the instrument channels VOLUME knob ⑤ as high as necessary while setting the MASTER potentiometer ⑥ as low as possible.**

The DRM1 MKIII's instrument channels

The eight instrument channels are tailored to generate specific drum sounds. However, thanks to their flexibility, you are explicitly asked to experiment and get creative. You will find out that each instrument channel offers plenty of different sounds.

KICK



Figure 3: KICK instrument channel of the DRM1 MKIII

The first channel is optimized to produce bass drum sounds.

DECAY sets the length of the sound until fade out. The first half of the control allows creating tight kick drums for dance music. From the noon-setting of the control, the kicks are significantly increasing in length. These sounds are often found in genres such as Hip-Hop or R'n'B. With **DECAY** set to maximum, long sounding bass drums can be achieved. Use these for Jeep Beats, D'n'B and Dubstep – BOOOOOOOM

PITCH sets the overall sound frequency. Of course, the lower range of this knob is relevant when creating bass drums. Start from a 9 o' clock position. With **PITCH** adjusted to a higher value, you may as well create tom- and percussion sounds with the *KICK* instrument channel. **PITCH** interacts with the following parameters **BEND** and **TIME**.

BEND adjusts the intensity of a pitch modulation by the **TIME** envelope. Higher values will increase the amount of modulation but also increase the perceived pitch of the sound, especially with **DECAY** set to shorter values. Regard **PITCH**, **BEND** and **TIME** as being interactive.

With pitch modulation being completely absent, bass drums may sound flat and not distinctive; therefore we recommend at least a little dose of **BEND**. To create dance-kicks use higher **BEND** settings and lower **TIME** settings. For long booming kicks keep the control in the lower half.

With **PITCH** being set to its maximum, **BEND** can no longer fully modulate the pitch.

TIME adjusts the release time of the pitch envelope. In general, short settings are useful for bass drums while longer values will make the sound lose its kick specific character. A long decay might still be useful to create percussions and effect sounds.

WAVE is a mix control that seamlessly blends the oscillators waveform from sine to square. Here, the sound changes from soft to harder. Within the first half of the control's range, the sound receives additional rawness and depth. At higher values, the sound will start to overdrive and distort, making an additional overdrive or distortion pedal superfluous when wanting to create harder sounding bass drums.

NOISE adds a short fixed noise impulse to the sound's start. This imitates the noise of the beater hitting an acoustic bass drum. Always adjust **NOISE** in correlation to the complete mix. What might appear too intrusive when being soloed might already sound too gentle within a full mix.

ATTACK adds a short fixed needle impulse to the sound's start. This will support the bass drum's assertiveness. Like **NOISE**, set **ATTACK** in correlation to the complete mix. What might appear too intrusive when being soloed might already sound too gentle within a full mix.

DRUM 1/DRUM 2



Figure 4: DRUM 1 instrument channel - DRUM 1 and DRUM 2 are identical

The two *DRUM* instrument channels are built identically. These are meant to create toms, percussions and metallic sounds but can also produce bass drums differing in character to *KICK*. Thanks to two available channels you may either create two completely different sounds or create sound pairs such as low and hi toms or congas.

DECAY sets the release time or the sound's length. Its range is a little broader compared to *KICK* allowing to create very short clicks.

PITCH sets the instrument channel's pitch/frequency.

BEND adjusts the amount of a possible pitch modulation by the **DECAY** envelope. In its central position, no modulation is present. Turn clockwise from the center position to modulate the pitch, descending it. Turn counterclockwise from the center position will invert the modulation, resulting in ascending pitch. This modulation interacts with the **DECAY** setting.

ATTACK adds a short fixed needle impulse to the sound's start to support its assertiveness. Always adjust **ATTACK** in correlation to the complete mix.

FM INT defines the intensity of the frequency modulation (FM). With active FM, the *DRUM* instrument channels frequency, specified with **PITCH**, is being modulated by a sine modulation oscillator. Set the **FM INT** control fully counterclockwise to switched off FM.

FM FREQ sets the frequency of the modulation oscillator. With values starting from the knob's 9 o' clock position, the modulation enters the audible range, resulting in a broad frequency spectrum. This allows creating atonal and metallic timbres. At lower values, FM will result in modulations comparable to a typical LFO.

WAVE is a mix control that seamlessly blends the oscillators waveform from sine to square. Here, the sound changes from soft to harder. Within the first half of the control's range, the sound receives additional rawness and depth. At higher values, the sound will start to overdrive and distort. The interaction between **WAVE** and the FM parameters will provide a broad sound palette for different percussion sounds.

MULTI

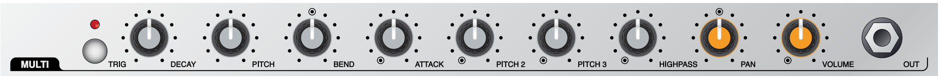


Figure 5: MULTI instrument channel of the DRM1 MKIII

MULTI contains three oscillators with broad tuning ranges. Because of this, the resulting sounds are very flexible, ranging from bass drums and toms to cowbells and other metallic percussions to sound effects.

DECAY sets the sound's length.

PITCH defines the overall pitch/frequencies of all three oscillators.

BEND adjusts the amount of the **DECAY** envelope modulating **PITCH**. Turn clockwise from the center position to modulate the pitch, descending it. Turn counterclockwise from the center position will invert the modulation, resulting in ascending pitches.

ATTACK adds a short fixed needle impulse to the sound's start to support its assertiveness. Always adjust **ATTACK** in correlation to the complete mix.

PITCH 2 sets the pitch/frequency of the second oscillator. Changing **PITCH** will always change the frequency of **PITCH 2**, too. **PITCH 2** can be freely adjusted, so that it sounds higher or lower than the first oscillator. With **PITCH 2** set fully counterclockwise, the second oscillator is turned off.

PITCH 3 sets the pitch/frequency of the third oscillator. It works the same way than **PITCH 2** with the second oscillator.

HIGH PASS adjusts the cutoff frequency of an additional high pass filter. It allows attenuating bass frequencies of the sound if needed. The filter's effect depends upon the sound's pitch. With **PITCH/2/3** being adjusted above the 9 o' clock position, the high pass filter's effect will be almost insignificant.

SNARE



Figure 6: SNARE instrument channel of the DRM1 MKIII

The duty of the *SNARE* instrument channel is apparent. However, due to its various parameters, the DRM1 MKIII's snare drum is a lot more changeable than you might guess from previous analogue drum machines. The sound is build up from different components: noise, a needle impulse, a resonance filter and a pseudo reverb. This allows a wide spectrum of sounds ranging from short "clacks", resembling old beat boxes, to compact snare sounds with noise components and additional reverb.

DECAY REV sets the length of the reverb effect. This parameter's effect is only audible with **REVERB** being enabled.

REVERB adjusts the intensity of the reverb effect. With this control set fully counterclockwise, the reverb is disabled.

DECAY N sets the release time or length of the sound's noise component. This parameter's effect is only audible with **NOISE** being enabled.

NOISE sets the volume of the sound's noise component. By this, the snare will receive more body and therefore sounds more authentic. With this control set fully counterclockwise, **NOISE** is disabled.

ATTACK adds a short fixed needle impulse to the sound's start to support its assertiveness on the one hand, but is also used to initiate oscillation of the resonance filter component. The audibility of the needle impulse also depends upon the intensity of the filter's resonance. Always adjust **ATTACK** in correlation to the complete mix. What might appear too intrusive when being soloed might already sound too gentle within a full mix.

RESO specifies the intensity of the filter's resonance and, as a result, colors the tonal component of the snare sound. Only at higher values, the filter will start to self-oscillate.

FILTER sets the cutoff frequency of the low pass filter. Presuming the filter has been excited to oscillate, this control adjusts the pitch of the snare's tonal sound component.

☛ **Different kind of percussion sounds are possible, only by using the snare drum's filter section but leaving out the NOISE component. With FILTER and RESO being fully opened, the result will sound clave-like. By attenuating RESO, this sound turns into a snare resembling a preset-beat-box from '78. Lowering FILTER and combine it with different RESO settings, leads to creditable 8-toms, congas and bongos.** **(see "SNARE" on page 47)**

HI HAT 1/HI HAT 2

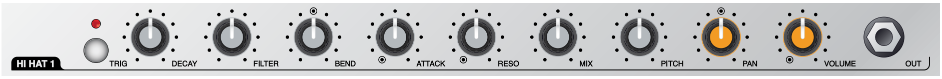


Figure 7: HI HAT 1 instrument channel of the DRM1 MKIII - HI HAT 1 and HI HAT 2 are identical

These two instrument channels are meant to create hi-hats but also cymbal sounds. Achieve a broad spectrum of cymbals, percussions and sound effects on a basis of filtered noise and a metallic oscillator mixture.

DECAY sets the release time or the sound's length.

FILTER sets the cutoff frequency of the low pass filter, coloring the overall sound of the channel.

BEND adjusts the amount of a possible cutoff modulation by the **DECAY** envelope. In its central position, no modulation is present. Turn clockwise from the center position to modulate the filter's cutoff frequency, descending it. Turn counterclockwise from the center position will invert the modulation, resulting in an ascending cutoff frequency. This modulation interacts with the **DECAY** setting.

ATTACK adds a short fixed needle impulse to the sound's start to support the hi-hat and cymbals' assertiveness. Always adjust **ATTACK** in correlation to the complete mix. The pitch of the impulse can be adjusted in parallel with the oscillator mixture using **PITCH**.

RESO specifies the intensity of the filter's resonance which, as a result, shapes the sound coloration of the hi-hat- and cymbal.

MIX controls the mixture between the noise part and the multiple, detuned oscillators. Turned fully counterclockwise, only the noise component will be audible, turned fully clockwise, only the oscillator mixture will be audible, allowing for more "authentic" sounds, due to the metallic sound.

PITCH defines the pitch/frequency of the oscillator mix as well as for the **ATTACK** impulse.

☛ ***HI HAT 1* and *HI HAT 2* can be triggered in two versions, using the TRIG button ② - either as cymbal/open hi-hat or as closed hi-hat. The closed hi-hat has a fixed, short decay time, independent of the DECAY control. After switching on the DRM1 MKIII, the TRIG button ② defaults to trigger the cymbal/open hi-hat, with the sound's length being defined by DECAY. To toggle the trigger-modes, press and hold TRIG ② for approx. two seconds. The corresponding LED will light up shortly to confirm the operation.**

By using MIDI, both sounds of these instrument channels, cymbal/open hi-hat and closed hi-hat, can be played by different MIDI notes. Here, the dependency between the two sounds on one channel is automatically reflected (see "MIDI Functions" on page 18).

CLAP

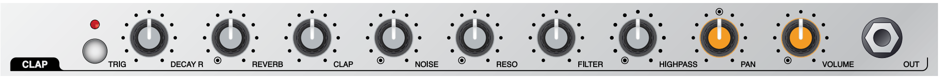


Figure 8: CLAP instrument channel of the DRM1 MKIII

CLAP serves a defined task. It simulates the clapping of several hands. Like *SNARE*, it also offers an electronic pseudo-reverb which, here, is an integral part of the sound and supports its authenticity. The *CLAP* instrument channel also incorporates a resonance filter component.

DECAY REV sets the length of the reverb effect. This parameter's effect is only audible with **REVERB** being enabled.

REVERB adjusts the intensity of the reverb effect. With this control set fully counterclockwise, the reverb is disabled.

CLAP sets the speed of a sequence of the individual claps (needle impulses).

NOISE adjusts the amount of noise that sounds conjointly with the claps. Without adding any **NOISE** the results sound unnatural.

RESO specifies the intensity of the filter's resonance and, as a result, colors the tonal component of the clap sound in interaction with the **FILTER** setting.

FILTER sets the cutoff frequency of the low pass filter. In interaction with **RESO**, this control adjusts the coloring of the sound.

HIGH PASS adjusts the cutoff frequency of an additional high pass filter. It allows attenuating bass frequencies of the sound if needed. The filter's effect is quite unobtrusive and more targeted to embed the clap sound into the DRM1 MKIII's overall drum kit sound.

MIDI Functions

The DRM1 MKIII receives MIDI notes including corresponding velocity data. This way, the sound can be played dynamically. Other MIDI data such as controller data are not processed.

Setting the MIDI-channel and note number for an individual instrument channel

1. Press the **TRIG** button ② of the corresponding instrument channel while switching the unit on. Hold the button for about three seconds until the sound and the corresponding LED is triggered. The DRM1 MKIII has now entered learn mode

2. Now, send a MIDI note number to the unit, e.g. by pressing a note on a connected keyboard. The note number and the MIDI-channel used will be learned by this instrument channel. The DRM1 MKIII automatically and immediately jumps into normal play mode.

Repeat these steps for each instrument channel if needed. This way you may play the DRM1 MKIII's sound on different MIDI-channels.

Setting the MIDI-channel and note numbers for all instrument channels

1. Press any two **TRIG** buttons ② while switching the unit on. Hold the buttons for about three seconds until both instrument channels and its corresponding LEDs are triggered. The DRM1 MKIII has now entered learn mode.

2. Now, send a sequence of eight note numbers to the unit, e.g. by pressing notes on a connected keyboard. All note numbers and the MIDI-channel used for transmission will be learned.

   The first transmitted note number refers to the DRM MKIIIs *KICK* instrument channel. Its TRIG LED will shortly light up and the sound will be triggered. This confirms the saving of the note number for *KICK*. The DRM1 MKIII now automatically advances to the next instrument channel: *DRUM 1*. After that *DRUM 2*, *MULTI*, *SNARE*, *HI HAT 1*, *HI HAT 2* and finally *CLAP will be assigned*.

☛ **Both methods allow assigning multiple instrument channels to the same MIDI note number. In this scenario the sounds will be commonly triggered.**

☛ **Since both *HI HAT* instrument channels allow the triggering of two sounds (open and closed hi-hat), the *HI HAT* instrument channels will automatically be assigned to two note numbers. The note number being sent to the DRM1 MKIII's *HI HAT* instrument channels assigns the open hi-hat/cymbal sound. The closed hi-hat is automatically assigned to a note number two semitones (equals two MIDI notes) below the open hi-hat. Therefore, pay attention to keep that position unoccupied when assigning note numbers to other sounds of the unit.**

Reset

While in learn-mode, the DRM1 MKIII restores its factory defaults when no note numbers are received before switching the unit off.

Factory Defaults

Channel	MIDI note number on MIDI channel 10
KICK	36 (C)
DRUM 1	48 (c)
DRUM 2	41 (F)
MULTI	58 (b)
SNARE	40 (E)
HI HAT 1 closed	49 (cis)
HI HAT 1 open/CYMBAL	51 (dis)
HI HAT 2 closed	42 (FIS)
HI HAT 2 open/CYMBAL	44 (GIS)
CLAP	39 (DIS)

Individual Outputs/Inserts

Each instrument channel offers a dedicated individual output/insert with a choice of possible applications. Crucial to the outputs' function is the cable being used, or to be more exact, the pin-assignment of the connector being placed in the output jack.

Use as individual output

The **OUT** jack ⑤ can be used as an individual out in two ways.

1. By using a standard TS-cable, the signal will be automatically excluded from the main outputs:



Figure 9: A simple TS (mono)- cable

2. By using a special cable with a TRS connector on one side and a TS connector on the other, the signal will additionally remain present on the main output:



Figure 10: Tip and ring of the TRS connector will need to be connected here.

Use as insert

The **OUT** jack ⑤ can also be used to insert external effect processors into that channel, such as filters or delays. To do so, use a so-called insert-cable:

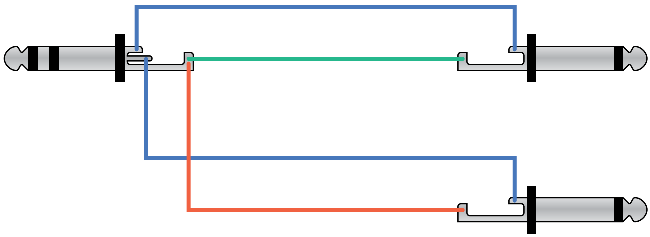


Figure 11: Insert cable

- Connect the TRS connector to the instrument channel's **OUT** ⑤.
- Connect the send connector to the input of the effect processor.
- Connect the return connector (often color-coded in red) to the output of the effect processor.

Trigger-Inputs (optional)

You can purchase the DRM1 MKIII either with or without trigger-inputs.

The 10 trigger-inputs allow triggering the DRM1 MKIII's sound from an analogue sequencer. The unit will accept gate signals between 2 and 12 volts with a minimum length of 10 ms.

The analogue trigger-inputs do not respond to dynamic trigger signals. In this scenario, all sounds of the DRM1 MKIII can only sound at a fixed volume.

The trigger inputs do not work with directly connected drum pads.

Technical Specifications

MASTER	2 x 1/4"-TS-jack, unbalanced (L/R) max. output level: + 18 dBu
OUT/INSERT (per instrument channel)	1 x 1/4"-TRS-jack, unbalanced max. output level (tip): + 18 dBu max. input sensivity (Ring): + 18 dBu
PHONES	1 x 1/4"-TRS jack; impedance: 32 Ω ... 600 Ω
Controls	7 sound shaping parameter, PAN, VOLUME per instrument channel; MASTER VOLUME
MIDI	IN, THRU accepts MIDI NOTE NUMBERS with VELOCITY
Measurements	desktop: 483 mm x 225 mm x 125 mm (L x T x H) rack: 19", 5 U, 90 mm deep (from back of front panel)
Weight	3.7 kg
Trigger inputs (optional)	10 x 1/4"-TS jack; GATE signal: 2 ... 12 V, 10 ms
Acessory	wooden side panels

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